MACK TRUCKS INC.

EXECUTIVE ORDER A-027-0109
New On-Road Heavy-Duty Engines

Pursuant to the authority vested in the Air Resources Board (ARB) by Health and Safety Code (HSC) Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order (EO) G-02-003; and

Pursuant to the December 15, 1998 Settlement Agreement (SA) between ARB and the manufacturer, and any modifications thereof to the Settlement Agreement;

IT IS ORDERED AND RESOLVED: That the engine and emission control systems produced by the manufacturer are certified as described below for use in on-road motor vehicles with a manufacturer's GVWR over 14,000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

| | | | | | granteu. | | | |
|---|--|--|--|--|---|--|--|--|
| MODEL YEAR ENGINE FAMILY | | ENGINE SIZE (liter) | FUEL TYPE {CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas) | STANDARDS & TEST PROCEDURE | INTENDED SERVICE CLASS (L/MH HDD=ilight/medium/heavy heavy-duty | | | |
| 2004 | 4MKXH11.9H70 | 11.9 | Diesel | Diesel | [HD] diesel; UB=urban bus; HDO=HD Otto | | | |
| SPECIAL FEATURES & EMISSION CONTROL SYSTEMS | | ENGINE MODELS / CODES (rated power in horsepower, hp) | | | | | | |
| DDI, EGR, TC, CAC, SPL, PCM | | AC-460P (480 hp), AC-460E (460 hp), AC-427 (427 hp), AC-400 (400 hp), AC-355/380 (355 hp), AC-350 (350 hp), AC-330/350 (330 hp) | | | | | | |
| prefix)=parall | vehicle weight rating TM =multi port fuel injection ion AIR=secondary air in el (2) (suffix)=in series dehyde g/bhp-hr=grams | Jection PAIK= | ay/oxidizing catalyst WU (prefix) =warm-up cat. IMFI DDV/DI=direct /indirect dlesel injection TC/ pulsed AIR SPL=smoke puff limiter ECMPCM=e | 02S≐oxygen sensor /SC≡turbo/super cho | HO2S=heated O2S TBI=throttle body fuel | | | |

The following are the exhaust emission standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT), in g/bhp-hr, for this engine family under the "Federal Test Procedure" (FTP) (Title 13, California Code of Regulations, (13 CCR) Section 1956.1 (urban bus) or 1956.8 (other than urban bus)), and under the "Euro III Test Procedure" (EURO) in the Settlement Agreement, including EURO's "Not-to-Exceed" standard(s). "Diesel" CO certification compliance may have been demonstrated pursuant to Code of Federal Regulations, Title 40, Part 86, Subpart A, Section 86.091-23(c)(2)(i) in lieu of testing. (For flexible- and dual-fueled engines, the CERT values in brackets [] are those when tested on conventional test fuel. For multi-fueled engines, the STD and CERT values for default operation permitted in 13 CCR Section 1956.1 or 1956.8 are in

| | | | | | EURO'S NTE | | NMHC: 0.625 | | NOx: * | | NMHC+NOx: 3.000 | | PM: 0.125 | |
|-----------------------|--|------|------|------|------------|--------------|-------------|------|-------------|-----------|-----------------|------|-----------|--------------|
| * = not applicable | НС | | NMHC | | NOx | | NMHC+NOx | | со | | PM | | нсно | |
| | FTP | EURO | FTP | EURO | FTP | EURO | FTP | EURO | FTP | EURO | FTP | EURO | FTP | EURO |
| (DIRECT) STD | | | 0.5 | 0.5 | * | * | * | * | 15.5 | 15.5 | 0.10 | 0.10 | | LUKU |
| AVERAGE STD | * | | • | * | * | * | 2.5 | • | * | 10.0 | 1 | 0.10 | | |
| FEL | | * | * | * | * | | 2.4 | 24 | | | | | | • |
| CERT | | | 0.1 | 0.02 | | | | 2.4 | | ļ <u></u> | | - 1 | * | * |
| · | ــــــــــــــــــــــــــــــــــــــ | | 0.1 | 0.02 | | | 2.2 | 2.0 | | | 0.08 | 0.07 | * | |

BE IT FURTHER RESOLVED: That certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR Sections 1965 (emission control labels), and 2035 et seq. (emission control warranty).

BE IT FURTHER RESOLVED: That the listed engine models are conditionally certified subject to the following conditions: (1) The SA is in effect; (2) The manufacturer is in compliance with all applicable certification requirements of the SA and any modifications thereof; and (3) The manufacturer has elected to seek certification of the listed engine models under the SA's provision in Chapter VI.E (Averaging, Banking and Trading) and shall be required to comply with these and any other provisions.

Engines certified under this Executive Order shall conform to all applicable California emission regulations and all requirements under the Settlement Agreement and any modifications thereof.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this ______ day of January 2004.

Allen Lyons, Chief

Mobile Source Operations Division